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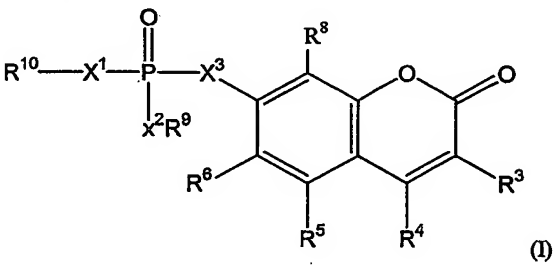
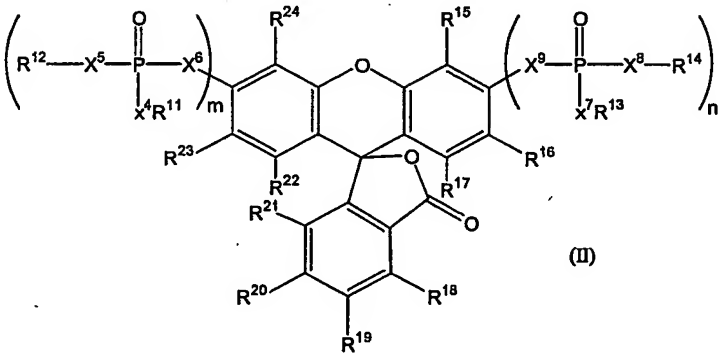
(54) Title: FLUORESCENT SUBSTRATES FOR DETECTING ORGANOPHOSPHATASE ENZYME ACTIVITY



(I)



(II)

(57) Abstract: Disclosed are compounds of the formula (I): wherein R^3, R^4, R^5, R^9, and R^{10} are selected from the group consisting of H and groups or atoms other than H, and R^6 and R^8 are halo or hydrogen; X^1, X^2, and X^3 are independently O or S; provided that R^9 and R^{10} are not simultaneously H, when all of X^1 ; X^2, and X^3 are O; and of the formula (II) wherein R^{11}-R^{14} are selected from the group consisting of H and groups or atoms other than H; X^4-X^9 are independently O or S; n and m are 0 or 1 but m and n cannot be 0 simultaneously; R^{15}- R^{24} can be H or any substituent so long as the compound of formula II upon hydrolysis provides a fluorescent compound. These compounds are useful as substrates with high specificity for organophosphatase particularly human paraoxonase and bacterial organophosphorus hydrolase. Also disclosed is a method for detecting and/or measuring the paraoxonase activity in a fluid comprising contacting the fluid with a fluorescent substrate and measuring the fluorescence of the fluorescent product formed.

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